Cellular Immunology

AN INTERNATIONAL JOURNAL

EDITOR-IN-CHIEF: H. Sherwood Lawrence

Volume 71, 1982

ACADEMIC PRESS
A Subsidiary of Harcourt Brace Jovanovich, Publishers
New York London
Paris San Diego San Francisco São Paulo Sydney Tokyo Toronto

Copyright © 1982 by Academic Press, Inc.
All Rights Reserved

No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopy, recording, or any information storage and retrieval system, without permission in writing from the copyright owner.

The appearance of the code at the bottom of the first page of an article in this journal indicates the copyright owner's consent that copies of the article may be made for personal or internal use, or for the personal or internal use of specific clients. This consent is given on the condition, however, that the copier pay the stated per copy fee through the Copyright Clearance Center, Inc. (21 Congress Street, Salem, Massachusetts 01970), for copying beyond that permitted by Sections 107 or 108 of the U.S. Copyright Law. This consent does not extend to other kinds of copying, such as copying for general distribution, for advertising or promotional purposes, for creating new collective works, or for resale. Copy fees for pre-1982 articles are the same as those shown for current articles.

MADE IN THE UNITED STATES OF AMERICA

Contents of Volume 71

NUMBER 1, JULY 15, 1982

SHIGEKI NAGAO, ATSUSHI TANAKA, KIKUO ONOZAKI, AND TATSUICHIRO HASHIMOTO. Differences between Macrophage Migration Inhibitions by Lymphokines and Muramyl Dipeptide (MDP) or Lipopolysaccharide (LPS): Migration Enhancement by Lymphokines 1

GORDON F. BURNS, FRANCIS L. BATTYE, AND GIDEON GOLDSTEIN. Surface Antigen Changes Occurring in Short-Term Cultures of Activated Human T Lymphocytes: Analysis by Flow Cytometry 12

LILLY Y. W. BOURGUIGNON AND BRYAN T. BUTMAN. Morphological Analysis of Surface Immunoglobulin Biosynthesis in Mouse B Lymphoid Cells Using Immunoelectron Microscopy 27

MARIO CESAR SALINAS-CARMONA, IGAL GERY, PAUL RUSSELL, AND ROBERT B. NUSSENBLATT. Mitogen-Induced Suppressor Factor(s) from Human Lymphocytes: Effects on Lymphoid and Nonlymphoid Cells and Biophysical Properties 44

ULYSSES G. MASON III, LYNN E. GREENBERG, SAMUEL S. YEN, AND CHARLES H. KIRKPATRICK. Indomethacin-Responsive Mononuclear Cell Dysfunction in "Atypical" Mycobacteriosis 54

PAULA J. D'AMORE AND SIDNEY H. GOLUB. Detection of Double Target Binders at the Single Cell Level: An Evaluation of the Specificity of NK and MLC-Induced NK-Like Cells 66

TERUTAKA KAKIUCHI AND HIDEO NARIUCHI. Different Responses of CR(−) and CR(+) B Cells to LPS Stimulation 80

NORMAN L. LETVIN, KENNETH L. ROCK, JERRY T. NEPOM, COLETTE F. GRAMM, AND BARUJ BENACERRAF. Antibody Responses to Trinitrophenyl (TNP)-L-Glutamic Acid^{60}–L-Alanine^{30}–L-Tyrosine^{10} (GAT) in Microcultures: Anti-Hapten and Anti-Carrier Responses Appear to Be under Separable Control 89

MARLENE ALDO-BENSON. The Effect of Removing Hapten from the Surface of Hapten-Bearing Cells in Tolerance Induced by DNP-Isologous IgG 99

HANS-MICHAEL DOSCH, PHILIP LAM, AND ERWIN W. GELFAND. Regulation of Human *in Vitro* Anti-Hapten Responses: Demonstration of a Carrier Effect 110

M. J. GELABERT, C. TRANSY, AND C. PENIT. Effect of "Facteur Thymique Sérique" (FTS) on TdT Expression in Murine Thymocytes 118

HELENA PAVLOV, MARK HOGARTH, IAN F. C. MCKENZIE, AND CHRISTINA CHEERS. *In Vivo* and *in Vitro* Effects of Monoclonal Antibody to Ly Antigens on Immunity to Infection 127

DENISE SAMUEL, FRANÇOIS DENIZOT, MARIE SUZAN, BENT RUBIN, AND PIERRE GOLSTEIN. Control of T- and B-Lymphocyte Differentiation: Preliminary Characterization of Lymphocyte Promoter Factor(s) Made by FCS-Induced T-Cell Line and Clones 139

AIMÉ VAZQUEZ, DOMINIQUE CHARRON, AND PIERRE GALANAUD. Role of HLA-DR Antigens in Antibody Production: Monoclonal Anti-HLA-DR Antibodies Differ in Their Ability to Directly Inhibit B-Cell Response 148

DAVID A. HART. Differential Potentiation of *in Vitro* Lipopolysaccharide Stimulation of B-Lymphoid Cells by Lithium and Ammonium Ions 159

DAVID A. HART. Evidence that Lithium and Ammonium Ions Enhance Lipopolysaccharide Stimulation of Lymphoid Cells by Different Mechanisms 169

HISTORY OF IMMUNOLOGY

ARTHUR M. SILVERSTEIN. Development of the Concept of Immunologic Specificity: II .. 183

SHORT COMMUNICATIONS

J. LEE MURRAY. Prostaglandin E_2 Modulation of Human Monocyte Antibody-Dependent Cell-Mediated Cytotoxicity against Human Red Blood Cells 196

DANIEL E. MADDOX, IRWIN J. GOLDSTEIN, AND ALBERT F. LOBUGLIO. *Griffonia simplicifolia* I Lectin Mediates Macrophage-Induced Cytotoxicity against Ehrlich Ascites Tumor 202

LETTER TO THE EDITOR

EMILIO JIRILLO, SALVATORE ANTONACI, DONATO FUMAROLA, AND LORENZO BONOMO. Interferon α Modulates an Inverse Relationship between Mitogenesis and Antibody Synthesis on Human Peripheral Blood Lymphocytes (PBL) 208

PAPERS TO APPEAR IN FORTHCOMING ISSUES 210

NUMBER 2, AUGUST 1982

P. RALPH, N. WILLIAMS, M. A. S. MOORE, AND P. B. LITCOFSKY. Induction of Antibody-Dependent and Nonspecific Tumor Killing in Human Monocytic Leukemia Cells by Nonlymphocyte Factors and Phorbol Ester 215

LEONARD RAPHAEL AND BALDWIN H. TOM. *In Vitro* Induction of Primary and Secondary Xenoimmune Responses by Liposomes Containing Human Colon Tumor Cell Antigens ... 224

MARTINE LEVY, WOLF H. FRIDMAN, AND CATHERINE NEAUPORT-SAUTES. *In Vitro* Generation of Cells Producing Antierythrocyte Autoantibodies in Normal Mice 241

MARIE-LISE GOUGEON, LISE LECLERCQ, ILANA LÖWY, GEORGES BISMUTH, GÉRARD SOMME, AND JACQUES THEZE. *In Vitro* Inhibition of the Helper Activity of GAT-Specific T-Cell Lines by a Syngeneic Anti-Idiotypic Serum: Preferential Effect on the IgG_1 Response 254

PAMELA B. NAKAJIMA AND BRIGITTE T. HUBER. Functional Evidence for Abnormal Maturation within a B-Cell Subpopulation of NZB Mice 270

C. MOYERS AND W. DROEGE. Spleen Cells from Athymic Mice Are Ineffective Stimulator Cells for Cytotoxic Responses in Microcultures and *in Vivo* 282

RONALD C. MCGARRY, ROBERT ANDERSON, AND SHARWAN K. SINGHAL. Regulation of Humoral Immune Responses by a Bone Marrow-Derived Glycolipid-Like Molecule 293

YASUKO TSUNETSUGU AND MICHIO FUJIWARA. Resistance to Tolerance Induction in B Cells of Autoimmune Mice—Abnormal Expansion of Low Affinity IgG-Producing B-Cell Population 303

STEPHEN H. LEECH, MARIAM ALI, AND ROBERT C. ELSTON. Augmentation of the Antibody Response by Hapten Help. I. Dominant Genetic Control 315

A. BARTOCCI, V. PAPADEMETRIOU, E. SCHLICK, B. C. NISULA, AND M. A. CHIRIGOS. Effect of Crude and Purified Human Chorionic Gonadotropin on Murine Delayed-Type Hypersensitivity: A Role for Prostaglandins 326

THOMAS H. RAND AND DANIEL G. COLLEY. Influence of a Lymphokine Fraction Containing Eosinophil Stimulation Promoter (ESP) on Oxidative and Degranulation Responses of Murine Eosinophils 334

TAKAHIRO OCHIYA, TORU BABA, ATSUSHI MIZUSHIMA, KIKUO ONOZAKI, AND HIDEO YAOITA. Induction of Macrophage Disappearance Reaction by Immunoadsorbed MIF 346

H. HEREMANS, M. DE LEY, A. BILLIAU, AND P. DE SOMER. Interferon Induced in Mouse Spleen Cells by *Staphylococcus aureus* 353

MARIANNE BRÜGGEMANN AND KLAUS RAJEWSKY. Regulation of the Antibody Response against Hapten-Coupled Erythrocytes by Monoclonal Antihapten Antibodies of Various Isotypes 365

YUKINOBU ICHIKAWA AND JERRY C. DANIELS. Induction of Autorosette-Forming Cells from Human Peripheral Lymphocytes by Several T-Cell Mitogens 374

EVELYN T. BELL AND J. ELLIS BELL. Regulation of the Immune Response in the Rat: Evidence for the Existence of Contrasuppressor Cells 388

KOHEI NAGASAWA AND TAK W. MAK. Induction of Differentiation in Human T-Lymphoblastic Leukemia Cell Lines by 12-*O*-Tetradecanoylphorbol 13-Acetate (TPA): Studies with Monoclonal Antibodies to T Cells 396

ICHIRO KURANE, KYOGO ITOH, SHIGEKI KATAOKA, FUMIO SAITO, AND KATSUO KUMAGAI. T Lymphocytes with Receptors for IgM-Fc ($T\mu$) as an Effector Cell in Delayed-Type Hypersensitivity 404

INA BHAN AND SIDNEY LESKOWITZ. The Specificity of Delayed Hypersensitivity to ABA-tyr-Pulsed and ABA-Coupled Macrophages 416

PAPERS TO APPEAR IN FORTHCOMING ISSUES 425

AUTHOR INDEX FOR VOLUME 71 429

The Subject Index for Volume 71 will appear in the December 1982 issue as part of a cumulative index for the year 1982.

"A series that has established itself as a definitive reference for biochemists."

—JOURNAL OF CHROMATOGRAPHY

METHODS IN ENZYMOLOGY

EDITORS-IN-CHIEF: SIDNEY P. COLOWICK AND NATHAN O. KAPLAN

"The appearance of another volume in that excellent series, *Methods in Enzymology*, is always a cause for appreciation from those who wish to successfully carry out a particular technique. . . ."

—AMERICAN SOCIETY OF MICROBIOLOGY NEWS

Volume 73: **IMMUNOCHEMICAL TECHNIQUES, Part B**

EDITED BY JOHN J. LANGONE AND HELEN VAN VUNAKIS

SECTION HEADINGS: Production of Antibodies. Labeling of Antigens and Antibodies. Separation Techniques in Immunoassay. Immunoassay Methods for the Detection of Antigens and Antibodies. Author Index. Subject Index.

1981, 768 pp., $59.00 ISBN: 0-12-181973-6

Volume 74: **IMMUNOCHEMICAL TECHNIQUES, Part C**

EDITED BY JOHN J. LANGONE AND HELEN VAN VUNAKIS

SECTION HEADINGS: Immunoassay Methods for the Protection of Antigens and Antibodies. Immunoassays Dependent on Other Detection Methods. Use of Antibodies to Study Enzymes. Use of Antibodies to Study Receptors. Data Analysis. Immune Complexes. Author Index. Subject Index.

1981, 736 pp., $58.00 ISBN: 0-12-181974-4

Explores innovative concepts of immunology . . .

IDIOTYPES AND LYMPHOCYTES

CONSTANTIN A. BONA

The aims of this monograph are to present the progress made in the study of the idiotypes of lymphocytes and the various experimental findings. These demonstrate that a vast spectrum of possible relationships between cells and antibodies and communications between various subsets of T and B lymphocytes exist within the immune system.

CONTENTS: Idiotypy—General Features. Ontogeny of Expression of Idiotypes. Variation of Idiotypes during the Immune Response. Expression of Idiotypes on B Cells. Idiotypic Determinants and T Cells. Immune Network: Regulation of Lymphocyte Functions by Anti-idiotype Antibodies. Physiological and Pathological Implications of the Immune Network. References. Index.

1981, 224 pp., $28.00 ISBN: 0-12-112950-0

Covers the important advances in β-lactam antibiotics research . . .

β-LACTAM ANTIBIOTICS

Mode of Action, New Developments, and Future Prospects

EDITED BY MILTON R. J. SALTON AND GERALD DAVID SHOCKMAN

CONTENTS: *Milton R. J. Salton*, β-Lactam Antibiotics, Bacterial Cell Wall Structure, and Biosyntheses. *B. G. Christensen*, Structure-Activity Relationships and Target Sites. *Richard B. Sykes and Nafsika Matsuhashi*, Tolerance, Outer Membrane Permeability, and Resistance. *Mark Richmond*, β-Lactams and Development of Resistance. *E. P. Abraham*, Cephalosporins and the Newer β-Lactam Antibiotics. *Edward H. Kass*, Clinical Strategies and Achievements in the Use of β-Lactam Antibiotics. *Richard V. McCloskey, Deborah Killebrew, Victoria Tutlane, and Judith Trent*, Clinical Utility of β-Lactams and Newer Semisynthetics. *Arnold L. Demain*, Prospects for Future Search and Development of β-Lactam Antibiotics. References at the end of each chapter. Index.

1981, 624 pp., $39.50 ISBN: 0-12-616050-3

A detailed survey of the present state of knowledge . . .

HLA IN ENDOCRINE AND METABOLIC DISORDERS

EDITED BY NADIR R. FARID

This book addresses the rapidly growing body of information on the association of human endocrine disorders with the human histocompatibility (HLA) system. Against the background of an up-to-date treatment of the basic facts about the human histocompatibility system, mathematical treatment of the data, and the shortcomings—particularly in the field of disease associations with HLA—separate chapters discuss individual diseases or groups of diseases in which considerable information has been accumulated over the past few years.

CONTENTS: *Noel R. Rose*, The Genetic Basis of Susceptibility to Autoimmune Disease. *Bodil Larsen*, Basic Features of the HLA System. *Richard S. Spielman, Lester Baker, and Charles M. Zmijewski*, HLA and the Genetics of Disease Susceptibility. *J. Nerup and M. Christy*, HLA and Diabetes Mellitus. *Nadir R. Farid*, Graves' Disease. *Nadir R. Farid*, Thyroiditis. *Maria I. New, Bo Dupont, and Lenore S. Levine*, HLA and Adrenal Disease. *Hilda Moens*, HLA and Certain Aspects of Reproduction. *George S. Eisenbarth and Richard A. Jackson*, Immunogenetics of Polyglandular Failure and Related Diseases. *Asher Haymovits and Marilena Fotino*, HLA in Metabolic Bone Disease. *M. Simon, R. Fauchet, J.-P. Hespel, P. Brissot, B. Genetet, and M. Bourel*, Idiopathetic Hemochromatosis and HLA. *James T. Rosenbaum and Hugh D. McDevitt*, Immune Response Genes and Their Role in Predisposition to Disease. References at the end of each chapter. Index.

1981, 368 pp., $39.00 ISBN: 0-12-247780-4

FROM A REVIEW OF VOLUME I: "The book will be of value not only to research immunologists, but also to biologists who utilize immunology as a research tool. There will be few institutes which find nothing of use in this volume."

—BRITISH JOURNAL OF CANCER

IMMUNOLOGICAL METHODS Volume II

EDITED BY IVAN LEFKOVITS AND BENVENUTO PERNIS

PARTIAL CONTENTS: *Massimo Trucco and Stefanello de Petris*, Determination of Equilibrium Binding Parameters of Monoclonal Antibodies. *Béla Takács and Theophil Staehelin*, Biochemical Characterization of Cell Surface Antigens Using Monoclonal Antibodies. *Charles Sidman*, Two-Dimensional Gel Electrophoresis. *Lucien A. Aarden and Ruud Smeenk*, Measurements of Antibodies Specific for DNA. *Vernon L. Alvarez, Carolyn A. Roitsch, and Ole Henrikson*, High-Pressure Liquid Chromatography of Proteins and Peptides. *Donald F. Gerson*, Methods in Surface Physics for Immunology. *Salvatore Cammisuli*, Hapten-Modified Antibodies Specific for Cell Surface Antigens as a Tool in Cellular Immunology. *Gianni Garotta and Tauro M. Neri*, HLA-DR Typing by Complement-Dependent B Lymphocyte Lysis. *Rosa R. Bernabe, Margaretha Tuneskog, Lucianna Forni, Carlos Martinez-A., Dan Holmberg, Frederick Ivars, and Antonio Coutinho*, The Protein A Plaque Assay for the Detection of Immunoglobulin-Secreting Cells. *Sarah Howie, In Vitro* Production and Testing of Antigen-Induced Mediators of Helper T-Cell Function.

1981, 308 pp., $35.00 ISBN: 0-12-442702-2

Future volumes in the METHODS IN ENZYMOLOGY Series are now available on a Continuation Order basis. Your Continuation Order authorizes us to ship and bill each future volume in the series automatically, immediately upon publication. This order will remain in effect until cancelled. Specify the volume number or title with which your order is to begin.

Send payment with order and save postage and handling.
Prices are in U.S. dollars and are subject to change without notice.

PN 113011

ACADEMIC PRESS, INC.

A Subsidiary of Harcourt Brace Jovanovich, Publishers
New York • London • Toronto • Sydney • San Francisco
111 FIFTH AVENUE, NEW YORK, N.Y. 10003

LYMPHOKINES

A FORUM FOR IMMUNOREGULATORY CELL PRODUCTS

Volumes 3 and 4

EDITED BY EDGAR PICK

Advisory Editor: MAURICE LANDY

LYMPHOKINES, Volume 3— Lymphokines in Macrophage Activation

CONTENTS: *R. J. North*, An Introduction to Macrophage Activation. *R. J. Soberman and M. L. Karnovsky*, Biochemical Properties of Activated Macrophages. *R. B. Johnston, Jr.*, Enhancement of Phagocytosis-Associated Oxidative Metabolism as a Manifestation of Macrophage Activation. *P. J. Edelson*, Macrophage Plasma Membrane Enzymes as Differentiation Markers of Macrophage Activation. *C. Sorg and C. Neumann*, A Developmental Concept for the Heterogeneity of Macrophages in Response to Lymphokines and Other Signals. *R. N. Moore et al.*, Role of Colony-Stimulating Factors as Primary Regulators of Macrophage Functions. *S. N. Vogel and D. L. Rosenstreich*, LPS-Unresponsive Mice as a Model for Analyzing Lymphokine-Induced Macrophage Differentiation *in Vitro*. *S. D. Sharma and J. S. Remington*, Macrophage Activation and Resistance to Intracellular Infection. *H. Masur et al.*, The Role of Cyclic Nucleotides in the Suppression of Intracellular Replication of *Toxoplasma* in Lymphokine-Activated Macrophages. *D. L. Boros*, The Role of Lymphokines in Granulomatous Inflammations. *R. Keller*, The Cytostatic and Cytocidal Effects of Macrophages: Are They Really Specific for Tumor Cells? *W. F. Piessens et al.*, On the Killing of Syngeneic Tumor Cells by Guinea Pig Macrophages Activated *in Vitro* with Lymphocyte Mediators. *M. S. Meltzer*, Tumor Cytotoxicity by Lymphokine-Activated Macrophages: Development of Macrophage Tumoricidal Activity Requires a Sequence of Reactions. *I. J. Fidler and A. Raz*, The Induction of Tumoricidal Capacities in Mouse and Rat Macrophages by Lymphokines. *M. L. Lohmann-Matthes et al.*, Macrophage Activation to Cytotoxicity by the Macrophage Cytotoxicity (Activating) Factor (MCF, MAF). *W. den Otter*, The Effect of Activated Macrophages on Tumor Growth *in Vitro* and *in Vivo*. *M. C. Pike and R. Synderman*, Requirement of Transmethylation Reactions for Immune Effector Function. Index.

1981, 480 pp., $49.50 ISBN: 0-12-432003-1

LYMPHOKINES, Volume 4—

CONTENTS: *D. Gospodarowicz*, Growth Factors for Animal Cells in Culture: A Nonimmunologist's View of Mitogenic Factors Other Than Lymphokines. *J. C. Houck and L. M. Patt*, Lymphocyte Chalone: Fact or Artifact? *R. Auerbach*, Angiogenesis-Inducing Factors: A Review. *G. Hewlett et al.*, The Role of Mercaptoethanol-Activated Serum Factor in Primary Immune Responses *in Vitro* and in the Growth of Lymphokine Cells. *G. B. Wilson and H. H. Fudenberg*, Leukocyte Migration Inhibition as a Method for Assaying Transfer Factor Activities. *P. Ralph*, Continuous Macrophage Cell Lines—Their Use in the Study of Induced and Constitutive Macrophage Properties and Cytotoxicity. *C. Bentley et al.*, The Macrophage as a Source of Complement Components. *C. J. Dunn and D. A. Willoughby*, Leukocyte and Macrophage Migration Inhibitory Activities in Inflammatory Exudates—Involvement of the Coagulation System. *G. M. Bokoch et al.*, Chemotactic and Chemokinetic Activity of Products of Mammalian Lipoxygenases. *E. L. Becker et al.*, Early Events in Neutrophil Activation: Receptor Stimulation, Ionic Fluxes, and Arachidonic Acid Metabolism. *D. Gemsa*, Stimulation of Prostaglandin E Release from Macrophages and Possible Role in the Immune Response. *J. Morley*, Role of Prostaglandins Secreted by Macrophages in the Inflammatory Process. *G. R. Mundy*, Control of Osteoclast Function by Lymphokines in Health and Disease. *C. Chany*, Interactions of Interferon with the Cell Membrane and Cytoskeleton. Index.

1981, 464 pp., $49.50 ISBN: 0-12-432004-X

Send payment with order and save postage and handling.
Prices are in U.S. dollars and are subject to change without notice.

ACADEMIC PRESS, INC.
A Subsidiary of Harcourt Brace Jovanovich, Publishers
New York • London • Toronto • Sydney • San Francisco
111 FIFTH AVENUE, NEW YORK, N.Y. 10003

PN 113026